



# Space News Roundup

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No. 39

## Truly: 'You are doing the right things'

By Karl Fluegel

Challenges facing NASA now are nothing new to the space agency and will evolve into the successes of tomorrow, Administrator Richard Truly told employees last week.

In a message broadcast from his office Sept. 21, Truly discussed the numerous problems that plagued the agency throughout the summer, but expressed confidence that they would be fixed.

"There has been a lot going on," Truly said. "Budget fights, successes, some setbacks and some failures... Let me just say that I believe that we are continuing to do business in a measured and professional manner. That some things haven't gone right this summer, but you are doing the right things."

Truly said NASA has had and continues to have the support of President George Bush, Vice President Dan Quayle and, "despite what you read in the newspaper," the agency's friends in Congress.

"They know we are on a cutting-edge business every day," he said.

Truly discussed the Space Shuttle *Columbia's* hydrogen leak problems, the *Ulysses* mission, the Hubble Space Telescope anomaly and the beginning of the Magellan mission at Venus.

"Believe you me, the only words that I can describe for the science that is coming, and (Magellan's) radar images is, it is absolutely superlative," Truly said. "You have seen a couple of those pictures, and you will see a lot more."

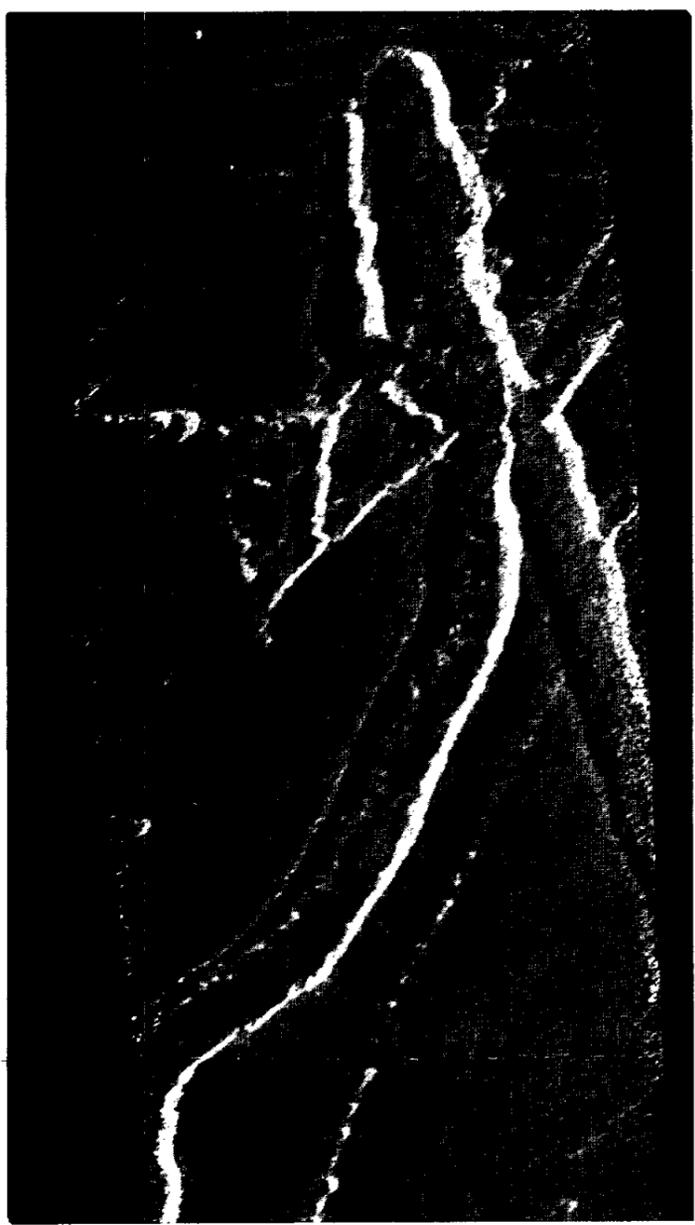
Truly said the Space Station *Freedom* program has made dramatic progress over that last year despite some controversy.

"We have a lot of challenges, and we have been in the newspaper, but frankly don't forget, every one of the problems we are working—power, weight, EVA time—are problems that NASA and you found, and each of those are well in hand along to a solution," he said.

"So I think Space Station *Freedom* is strong, and I believe when this budget process is complete, you will find that we have gotten good support."

Truly said the future is the bottom line. "I can tell you what I have been reading in the paper, and what you have been sensing, and that is that the space world of tomorrow is going to be different than the space world of yesterday."

"It is not just going to be America and the Soviet Union. It already is, and more importantly in the future it is going to be an international endeavor, and we are in the middle of it."



NASA Photo

**PLASTIC PLANET**—Scientists at NASA's Jet Propulsion Laboratory continue to be amazed by the highly active surface of Venus as revealed by the Magellan probe's synthetic aperture radar. The surface appears more "plastic" than Earth's, which allows for a different kind of tectonic activity. Images already have revealed impact craters as large as Los Angeles and several miles deep. The image of this 17-mile-wide, 46-mile-long portion of the Lavinia Region shows fault-bounded troughs that resemble the animated character Gummy.

## Shuttle managers approve Oct. 6 *Discovery* launch

By James Hartsfield

Work readying *Discovery* at Launch Pad 39B for STS-41 has gone smoothly, and shuttle managers Tuesday set an Oct. 6 launch date for the flight.

The date was set after managers met at Kennedy Space Center for the flight readiness review Monday and Tuesday.

"This date is a little success oriented and is dependent on not encountering any unusual problems," said Space Shuttle Director Bob Crippen. "But I think the shuttle team has a good chance of making the 6th."

At the pad this week, two space-suits were installed in *Discovery's*

airlock to be used if the need for an emergency spacewalk should arise during the mission. Wednesday, technicians tested the Inertial Upper Stage that will boost the *Ulysses* spacecraft on its way to explore the Sun's polar areas.

Thursday, *Discovery's* Freon cooling system was topped off. A leak was found in the spacecraft's No. 2 freon cooling loop following roll out to the pad. However, after overpressurizing the loop and examining the results, engineers determined the slow leak was unlikely to grow during flight.

Calculations using the highest leak rate recorded so far show that the size of the leak still would have to almost triple to pose any problems during STS-41. In addition, during the time *Discovery* has been on the pad, the leak rate has decreased slightly.

The orbiter's aft compartment will be closed out for flight on Sunday, and the STS-41 launch countdown is scheduled to begin at 2:30 a.m. CDT Wednesday. Launch will be at 6:35 a.m. CDT Saturday.

Commanding *Discovery* will be Dick

Richards. Pilot will be Bob Cabana, and mission specialists will be Bruce Melnick, Bill Shepherd and Thomas Akers.

Meanwhile, at Pad 39A, KSC technicians are working with the special investigation team appointed last week to isolate the source of *Columbia's* aft fuselage hydrogen leak. Leak tests at room temperature have been conducted using helium and mass spectroscopy, but no leaks have been found.

The engine 2 pre-valve was to be tested today using helium along with dry ice to cool the mechanism.

Out of more than 200 joints in the orbiter's main propulsion system, the panel has narrowed the possible leak areas to 83.

A tanking test will not be performed on *Columbia* until after *Discovery's* launch, when *Columbia* is transferred to Pad 39B to make room for *Atlantis* on Pad 39A. The schedule for such a test is still in work by the investigation team, Director of Space Flight Bill Lenoir said Wednesday.

"I'm hopeful that we'll have *Columbia*... back in the flying sequence in the December time frame and pull the ASTRO mission off then," Lenoir said. "We're keeping our eyes on what it may take to pull that off. But we have specifically not laid that on our engineering team; they're to go out and find the leak, find all of the leaks, and then we can get on with it."

*Atlantis*, now in Bay 2 of the Orbiter Processing Facility, is currently being prepared for a target launch date of Nov. 7 on STS-38, a Department of Defense-dedicated flight. The orbiter is scheduled to leave the OPF and be rolled over to the Vehicle Assembly Building on Tuesday.



**STS-41**

**Ulysses**

## Furloughs start Monday if agreement not reached

Final notices of an impending furlough are going out to civil service employees today, and a two-week sequestration period will begin Monday morning unless Congress and the President reach a last-minute budget agreement.

JSC Human Resources Director Jack Lister said his office will notify all JSC directors late Friday that their plans for a one-day furlough will take effect Monday unless Congress

passes a deficit reduction program over the weekend.

Employees Thursday began receiving individual letters notifying them of NASA's decision to proceed with the furloughs.

Each employee will receive a copy of the letter by close of business Friday, Lister said. Employees will be required to acknowledge its receipt in writing and indicate what day they plan to take the unpaid time off. A

handful of employees who are not at the center will be contacted by telephone and will then receive their letters by fax or mail. The "decision letter" is required under government personnel regulations, as was an earlier 30-day notice of intent.

Any significant developments in the furlough situation will be reported on the recorded JSC Employee Information Service, x36765, throughout the weekend. Employees

who are subject to furlough on Monday should call the service to find out whether they should come to work Monday morning.

The furlough period is the first level of NASA's responses to the 31.9 percent reduction from fiscal 1990 spending levels that will be required under Gramm-Rudman-Hollings law sequestration. The sequestration goes into effect automatically.

Please see **FURLOUGH**, Page 4

## JSC smokers coming to grips with new policy

*'I think most of us would rather have been getting a root canal'*

[Editor's note: With 17 years of cigarette smoking behind him and a Jan. 1, 1990, deadline for a smoke-free work environment ahead of him, Public Affairs Specialist Brian Welch is trying to quit. Welch will share firsthand his experiences and feelings, and what he learns that allows him to come to terms with the overriding reasons behind JSC's new anti-smoking policy. This is the first of eight installments.]

By Brian Welch

Larry Laufman watched with a smile as 28 of us filed grim-faced into Bldg. 45, Rm. 304 Tuesday afternoon for the first of eight weekly classes designed to help us quit smoking.

All things considered, I think most of us

would rather have been getting a root canal. Well, probably not. But whatever our druthers, it did seem clear that most of the people in my class were not overwhelmed by the prospect of what lies ahead.

Laufman, a former smoker who works for Methodist Hospital and has lectured on smoking cessation to a variety of groups all over the city, has clearly seen this before. He was calm and reassuring, positive and supportive, and told us stories about how other people in other places have dealt with the tedious task of giving up this addiction.

He stressed that it could be done, and that we could do it.

The program at Methodist has a pretty good track record, by and large, which is one reason the Human Resources Development Branch is sponsoring these sessions, one in the morning and one in the afternoon, for the next seven Tuesdays. Week Five is when we all quit. So stand by, Johnson Space Center,

this could get interesting.

The big reason for these classes, of course, is the recent announcement that JSC will become a smoke-free environment on New



Year's Day, 1991. With Smokers' Armageddon looming, the demand for some sort of help in quitting is high, according to training coordinator Beth Hall. "The phones haven't stopped ringing in three weeks," she said.

Small wonder. For those of us who smoke, the last decade has been unnerving as, one by one, the elevators, dining rooms, bars and Astrodomes of our world have been shut off to us and our 20 little friends in the pack of cigarettes we always have somewhere on our persons. The tide of revulsion against smoking has been inexorable, until finally it has come to this, and Tuesday afternoon we knew what "this" was. It's time to quit.

Laufman said all the right things. He told

Please see **DIARY**, Page 4

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# Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m. to 2 p.m. weekdays.

General Cinema (valid for one year): \$3.75 each.

AMC Theater (valid until May 1991): \$3.50 each.

Sea World (San Antonio, year long): adults, \$17.25, (two-day \$21.95); children (age 3-11) \$14.75, (two-day \$18.95).

Lovin' Feeling Concert (7:30 p.m. Sept. 29, Summit): \$16.

Texas Renaissance Festival Bus Trips (Oct. 13 or Nov. 10): child, \$6 (under 5), \$9; adult, \$12.

Texas Renaissance Festival (Saturdays and Sundays Oct. 6-Nov. 18): adults, \$8.95; children, \$4.95.

JSC-EAA Travel Fair (4:30-8:30 p.m. Oct. 4, Gilruth Center); must pick up free tickets from Bldg. 11 store; major airlines, tour companies and cruise lines will be present and drawings will be held).

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# Gilruth Center News

**EAA badges**—Dependents and spouses may apply for a photo I.D. 6:30-9 p.m. Monday-Friday.

**Defensive driving**—Course is offered from 8 a.m.-5 p.m., Oct. 13 and Nov. 17. Cost is \$15.

**Weight safety**—Required for use of the Gilruth Center weight room. The next classes will be from 8-9:30 p.m. Oct. 10 and 25. Cost is \$4.

**Aerobics and exercise**—Both classes are ongoing.

**Ballroom dance**—Professional instruction in beginning, intermediate, and advanced ballroom dancing. Classes begin Oct. 4 and meet every Thursday for eight weeks. Beginning and advanced classes meet 7-8:15 p.m. Intermediate class meets 8:15-9:30 p.m. Cost is \$60/couple.

**Flag football**—Registration will be done by a lottery system the week of Oct. 1. Come by the Gilruth Center, Rm. 146, for more information.

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# Technical Library News

The following selections are now available in JSC's Technical Library, Bldg. 45, Rm. 100.

*High Resolution Air- and Spaceborne Radar: Papers Presented at the Avionics Panel Symposium held in the Hague, Netherlands 8-12 May 1989*, AGARD, 1989. TL 500.N63 A24 No. 459.

*Orbital Mechanics and Mission Design*, AAS/NASA, 1989. TL 790. Ad9 v.69.

*Geoscience and a Lunar Base: A Comprehensive Plan for Lunar Exploration*, NASA, 1990. TL 799.M6 G46.

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# Dates & Data

## Today

**Cafeteria menu**—Special: tuna and salmon croquette. Entrees: pork chop with yam rosette, Creole baked cod. Soup: seafood gumbo. Vegetables: Brussels sprouts, green beans, buttered corn, whipped potatoes.

## Monday

**BS&S course**—The Seabrook Flo-tilla of the Coast Guard Auxiliary is offering an educational course, Boating Skills and Seamanship. The course is from 7:30-9:30 p.m. Mondays and Wednesdays beginning Oct. 1. Cost is \$15. For more information call Don Brago at 335-8544 or 480-1742.

**Cafeteria menu**—Special: Italian cutlet. Entrees: braised beef ribs, chicken a la king, enchiladas with chili. Soup: cream of broccoli. Vegetables: navy beans, Brussels sprouts, whipped potatoes.

## Tuesday

**Cafeteria menu**—Special: stuffed cabbage. Entrees: turkey and dressing, round steak with hash browns. Soup: beef and barley. Vegetables: corn coblette, okra and tomatoes, French beans.

## Wednesday

**IEEE video conference**—IEEE Galveston Bay Section Video Conference will be from 11 a.m.-2 p.m., Oct. 3, in the Gilruth Center. Registration deadline is Sept. 28. For more information, call Andy Lindberg, x31474.

**Cafeteria menu**—Special: pepper steak. Entrees: catfish with hush puppies, roast pork with dressing. Soup: seafood gumbo. Vegetables: broccoli, macaroni and cheese,

stewed tomatoes.

## Thursday

**Space flight banquet**—The North Galveston County Chamber of Commerce will host its Annual Space Flight Banquet beginning at 7:15 p.m., Oct. 4, at the South Shore Harbour Resort and Conference Center in League City. For more information call 337-3434 or 534-3231.

**Cafeteria menu**—Special: chicken fried steak. Entrees: beef tacos, barbecue ham steak, Hungarian goulash. Soup: turkey and vegetable. Vegetables: spinach, pinto beans, beets.

## Oct. 5

**Cafeteria menu**—Special: tuna and noodle casserole. Entrees: liver and onions, deviled crabs, roast beef with dressing. Soup: seafood gumbo. Vegetables: whipped potatoes, peas, cauliflower.

## Oct. 9

**Technology van**—The NASA Technology Transfer van will be at JSC from 9 a.m.-1 p.m. Oct. 9 in the parking lot south of Bldg. 25. The van's displays highlight the importance of transferring technology to the private sector.

## Oct. 11

**NPMA dinner meeting**—The National Property Management Association will hold its monthly dinner meeting at 5 p.m., Oct. 11 in the Gilruth Center. For more information contact Sandra Pierce at 282-4151.

## Oct. 20

**Wings Over Houston**—The 1990

Wings Over Houston Airshow will be Oct. 20-21 at Ellington Field. The U.S. Marine Corps' vertical take off and landing jet, the Harrier, will participate and the Confederate Air Force will celebrate the 50th Anniversary of the Battle of Britain with its WWII airpower demonstration. Contact Col. Ray Jones, 850-7545, or Lu Lewis, 784-5200, for more information.

## Oct. 23

**BAPCO meeting**—Bay Area PC Organization (BAPCO) will meet at 7:30 p.m., Oct. 23, at the League City Bank and Trust. For more information contact Earl Rubenstein, x34807, or Tom Kelly, 996-5019.

## Oct. 28

**Bicycle ride**—The Texas Coastal Century bicycle ride, a comprehensive tour of the greater Bay Area, will start from 8 a.m.-5 p.m. on Oct. 28 at the University of Houston-Clear Lake. Proceeds will benefit the Houston Food Bank and University of Houston-Clear Lake recreation and sports. Early registration by Oct. 1 is \$10; registration after Oct. 1 is \$15. For applications and more information, visit the Gilruth Center. Call Mike Prendergast at 335-2505 for details.

## Oct. 30

**Space conference**—Space Exploration '90, a conference and aerospace industry exposition sponsored by the NASA Alumni League, will be held Oct. 30-Nov. 1 at the South Shore Harbour Resort and Conference Center. Contact Carol Ramey, exposition manager, 800-765-7615, for more information.

# Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

## Property

Lease: LC & I-45, 3-1, cyclone fence, \$395/mo. 332-0365.

Sale: 60 acres on Hwy 80, 3 mi from Karnes City, TX (50 mi from San Antonio), 783-9164.

Sale: Nice two-story house in El Campo, TX on 1.5 lots w/fruit trees. 783-9164.

Sale: Meadowbend, 3-2-2, on cul-de-sac, storm windows, miniblinds, FPL, garage door opener, 2811 Woodhall Ct. 480-7100.

Rent: Lake Livingston, waterfront house, 3-2, CA&H, furn., wknd/wk rates, 482-1582.

Sale: Dickinson, 2 acres, Humble Camp Rd., improved property, all util. avail., nice trees, \$12K/acre. Shelly, 333-7153.

Sale: Texas City, 2-1-1, den, dining & living rms, enclosed back porch, curbs, \$32,500 OBO. Shelly, 333-7153.

Sale: El Dorado Trace condo, 1-1.5, townhouse plan, 825 sq ft, immac. cond. appliances, assum. loan. Gladys, 326-2725.

Sale: Big Bend area, getaway/hunting, 160 acres, \$110/acre, CFD 10% dn, 10% for 10 yrs. 337-4051.

Sale: Pebblebrook condo, 1BR, 700 sq ft, W/D, new A/C, vaulted ceiling, no closing cost, assum., \$341/mo. (409) 925-8593.

Sale: Limestone Co., 40-acre pasture land on paved road, fenced, ponds, barn, corral and catch pen, 2-2 mobile home, \$68K. 479-3965.

Sale/Lease: Wedgewood Village Friendswood, 3-2-2, 1650 sq ft, new carpet and paint, cul-de-sac. 482-6744.

Sale: Foreclosure, Shoreacres, 4,000 sq ft., 5-4 study plus mother-in-law suite and workshop on wooded 1-1/3 acre, \$114,900. x38039 or 333-1751.

Sale: Two water view lots near NASA, \$38,500 ea. Don, x38039 or 333-1751.

Sale: Surfside, 2-1-1, 2 blks from beach, corner lot, needs work, \$20K. 480-5141.

Sale: Meadowbend, 3-2-2, gas/elec, blinds, fans, microwave, garage door opener, under 10 yr warr., 8.5% assum., \$82K. x32607 or 538-1071.

Rent: Galveston condo, Seawall & 61st St. furn., sleeps six, dly/wknd/wk rates, cable TV, pool. x33479 or 486-0788.

Lease: CLC area condo, 2-1, FPL, all appl., miniblinds, W/D con., storage, swimming pool, \$450/mo. 486-0315.

Lease: Heritage Park, lg 3 BR, eat-in kitchen, FPL, dining rm, newly painted, no pets, \$725/mo. 282-2787 or 532-1240.

Sale/Lease: Alameda Mall area, 3-1.5-2, CA/H, fenced back yard, disp, dw, built-ins, PISD, x33656 or 486-8276.

Sale: 35 ft Mallard motor home, loaded, lo. mi., \$29K. 337-4051.

Lease: Restored 2-story Victorian, 3-1.5-2d, all appl., A/H, fans, patio deck/fenced yard, alarm system, 1621 Ball, Galveston, TX, \$770/mo. Carolyne Realtor, 763-8030 or 744-1703.

## Cars & Trucks

'83 Ford Van, v-8, auto, many extras, clean, \$4K. Samouce, x35053 or 482-0702.

'89 Hyundai Excel, loaded, 22K mi., dk red w/sunroof, grey int., ex. cond., \$1,500 plus assume note \$269/mo. x32161 or x35294.

'69 TR6 overdrive, AC, rebuilt eng., low mi., ex. cond., \$4,500. x34818 or 480-8335.

'68 Plymouth Fury II, 318 eng., new oil pump, starter, coil, distributor, battery, re-built carb., very good cond. 946-4867.

'86 Jeep Cherokee Pioneer & towing pkg., AC, PB, PS, luggage rack, \$4,500 OBO. 409-935-4400.

'89 Honda Accord LX-1 coupe, ex. cond., 17K mi. 5-sp, warr., \$13,5K OBO. 486-6859 or 333-8818.

'83 Mazda RX-7 GSL, ex. cond., 75K mi., sunroof, 60 series tires, new brakes, 5-sp, \$3,500. 478-1596 or 486-4508.

'84 Toyota truck, SR5 5-spd, matching cap, AC, PS, cass, sport seats, ex. cond. 482-8224.

'79 Triumph Spitfire parts car (rolled over), \$900/ offers. Andy, x38277.

'79 International Scout 4WD, factory rally pkg, V8-345 4 bbl, soft and hard tops, roll bar, Warn hubs, Rancho susp., 3" body lift, fresh transmission and transfer case, \$3,500 OBO. Wayne, 283-6514 or 337-5990.

'89 Nissan Sentra, 2dr, AC/ AM/FM/cass., new tires, low mi., blk, ex. cond., \$6,300 OBO. 929-7334 or 578-7118.

'80 Trans Am, for parts, 400/400 4:11 rearend, T-top, A/C, PW, etc., needs 1 piston ring to run, whole car for \$300. 480-4839. '88 Mustang LX conv., loaded, navy blue w/white leather int., ex. cond., \$10.2K. x35786 or 334-1852.

'82 Chevrolet Caprice Classic, auto, PS, PB, AC, AM/FM stereo, V8, cruise, tilt, power doors/locks/seats, 4dr, \$3,000. 326-7393.

'81 Chevy Citation, 4dr hltchbk, 4-cyl, 4-spd, AC, AM/FM, very good cond., \$1,350 OBO. Jim, x36926 or 480-2052.

'77 Ford Pinto, runs, needs more work, faded red, trim pkg incl., good tires, \$2,000 OBO. Mark, x30160 or 326-3004.

'86 34' Gulf Stream Classic motor home, 6.5 kW, queen sz. bed, dinette, couch, 2 side chairs, microwave, awning, TV antenna, sleeps 6, \$29.5K. Rich, 488-7082 or 457-4605.

'80 GMC Rally STX 8-pass. van, rebuilt 6-cyl, '84 Dodge Customized Prospector 7-pass. van. x33656 or 486-8276.

'73 Karmann Ghia convert., runs well, \$2,700. Debbie, x35154 or 488-7267.

Pioneer CT-F750 stereo cass. tape deck, Fisher XP-85 speakers, Acoustic Reasearh XB-91 turntable, Kenwood KR-4400 AAM/FM recvr, \$75 ea. x39588 or 487-1883.

Apple Macintosh Plus, \$750. Steve, 283-5632.

Scuba dive computer, U.S. Divers J.M. Cousteau Data Scann III electronic dive computer, built-in electronic dive tables, replaces pressure and depth gauges, 1 mo. old, was \$648, now \$550 OBO. Patrick, x32635 or 488-1079.

Apple IIe, 2 floppy drives, green monitor, grappler printer interface, 80 col. card, \$300; Apple II internal modem, SW, \$65; memory expansion card, 256K exp. to 1 meg, \$95; Applied Engineering 280 card and CPM SW, \$65; everything for \$450. x35786 or 334-1852.

Technics component stereo system, rcvr/tuner, cass. deck, belt drive turntable, two 26"x13" speakers, \$250. Scott, x34614 or 334-2278.

IBM XT computer, 640K mem., 20 MB hard disk, 2 floppies, AST 6-pk loaded mem., clock, ports, Taxan color hi-res monitor, looks new, little use, \$1,275 or trade for car or MAC SE and above. x30092 or 481-3637.

## Cycles

Woman's 10-sp. 486-1603.

'81 Honda CB 900 F motorcycle, sport model, well maintained, fresh Avon tires, helmet incl., 13K mi., \$1,000 OBO. Wayne, 283-6514 or 337-5990.

Boy's 24" racing bike, \$35; boy's 20" bike, \$18. Dave, x32750 or 333-4852.

'81 Suzuki 400EN, 9.2K mi., new rear tire, tags, helmet, \$500. Dave, 480-1225 or 538-1626.

26" mountain bike, good cond., \$60. 409-297-7038.

'82 Harley Davidson Sportster XLH motorcycle, elec. start, ex. cond., low mi., new batt., \$2,875 or trade for car or Mac II PC. x30092 or 481-3637.

## Boats & Planes

'67 Ebonite Shuttle slalom ski, Ultra Pro ski rope, anchor line, oar, and other boat accy. \$75 OBO; Draw-Tite camper/boat hitch, 3,500 lb capacity w/removable receptacle and 2" chrome ball, fits most full-size cars and trucks, \$100 OBO. 486-4963.

10' aluminum Jon boat, \$100. x36514.

Aircraft propeller, Sensenich 74DM6-0-58, overhauled and yellow tagged, fits some Beech, Piper PA-18, PA-22, PA-28 series aircraft, \$900. 538-2299.

Project boat, motor, and tilt tr., all suffering from lack of use, \$350. 474-2905.

Lido-14 sailboat, sails, trlr., cntrbd. sloop, loaded, ex. cond., sailing lessons incl. if needed, \$2,100. R. Hoover, x31360 or 996-7716.

'83 27' Chaparral Cabin Cruiser, new electronics, swim platform, full galley/head, AC and more, sleeps 6. x31833 or 534-6073.

16' Renegade ski boat, 140HP Evinrude, SST prop, new paint, carpet, IGN system, runs like new, \$2,750 OBO. 333-6868 or 486-7846.

10' Jon boat and 4HP Evinrude motor, \$300. 480-9698.

## Audiovisual & Computers

Phase linear amplifier, 200+ watts/channel into 8 ohms, 400+ watts/channel into 4 ohms, ex. cond., \$400. Frank, x39924/x33573 or 480-9376.

Tandy 1000 SX 384 exp. TD 640, 360K floppy, DOS 3.2, RGB color monitor, Deskmate, IBM Write, games, complete documentation, \$400 OBO. Rob, 485-7627.

12 MHz 286, coproc., 4 meg RAM, 2400 baud internal modem w/BITCOM, EGA monitor, 101 keyboard, 2.20 meg HD w/1:1 controller, 720K and 1.2M floppies, \$1,500. Bryan, x38204.

Apple IIe, 128 KB, 80-column card, monochrome monitor, dual disk driver, \$600 OBO. Keith, 283-5829 or 480-1179.

Home entertainment center cabinet, 7 ft., make into bar or side board, \$80. Samouce, x35053 or 482-0702.

Chest deep freezer, 17 cu ft, \$200. Samouce, x35053 or 482-0702.

Queen sofa/sleeper, matching loveseat, beige, ex. cond., x39190 or 332-6305.

Comfy sofa, off-white upholstery zips/snaps off for washing, ex. cond., \$200 OBO; large oriental rug, high quality, Chinese design, cran-gray-dark navy-rust, \$450 OBO. Anne, x34493 or 286-2932.

Teak trundle bed, \$40; microwave, \$20; girl's desk, \$20. Bill, x34062 or 333-4418.

Sofa/loveseat, beige, good cond., \$100; JVC stereo rack, \$30; TV stand, \$25. Ted, x36894 or 280-9595.

Cast iron Franklin style fireplace, good cond., approx. 36 in. wide and 20 in. deep, \$175 OBO. 339-1337.

Sofa/loveseat, ottomans, swivel chairs, ex. cond., make offer. L. Das, x33235 or 488-5532.

Full sz. box spring, matt., \$125. x38896 or 482-9447.

Sofa/loveseat, off-white, beige, some peach w/oak trim, good cond., \$150. x38896 or 482-9447.

RCA Whirlpool builtins, gas stove and cooktop, dishwasher and range vent, used but functional. Make an offer. Dean Thompson, 332-2229.

Big-Sur king sz. waterbed, 2-yrs old, good cond., all accessories incl., \$150 OBO. Greg, 797-7348 or 488-2082.

RCA pecan finish stereo console TV, \$400; Sears exerciser/rower, \$125; steel storage cabinet, \$75; end and cocktail tables, \$50; glass front stereo cabinet, \$45; sofa sz. picture, Red Poppies, \$65; Seal-A-Meal, \$10; Sanders men's western boots, sz. 10, \$65; old cast iron grill w/stand, \$75; Com-A-Long, \$25. Diane, 283-5618.

Spanish style dinette set, 42" x 60" table w/leaf, heavy steel base, padded vinyl swivel chairs, ex. cond., \$125. Bill, x39020 or 991-0361.

Penny's deluxe microwave, \$125; Kenmore washer and dryer, \$200 OBO; bentwood rocker, \$15; exercise bike, \$15. Mike, x31239 or 992-3522.

Danish walnut dinette set, ex. cond., \$65; Lazy Boy recliner, beige, like new, \$200 OBO. 488-3965.

Twin sz. waterbed w/mattress, \$75. x34126 or 421-4126.

Queen sz. motionless waterbed, \$300 OBO. David, 280-5326.

Two door legal sz. file cabinet, ex. cond., \$100. x30874 or 333-1316.

White French Provincial desk w/3 side dwrs., 1 center dwr.; 3-shelf bookcase; lady's 3-piece Samsonite luggage set; 1 ea. men's Hartmann & American Tourister 2-suitier luggage; 30" barstool; 2 dwr. end table w/glass top; hexagonal end table w/ 2 door accessible interior; coffee table w/dwr; 2 table lamps w/shades. 532-1994.

Console TV, ex. cond., \$100; misc. baby furn.; kitchenette, ex. cond., \$25. Tammy, x32718.

Blue-grey-cream couch w/nubby type fabric, 3 yrs. old, good cond., \$65. 554-2787.

Computer table w/monitor shelf, work area, dwr, and book/CPU shelf, walnut finish, ex. cond., \$35; sewing table, fits all standard models, \$25. 480-6797.

Litton microwave oven, lg. sz., \$60. Don, 280-2450 or 486-1830.

New sunlamp on 5' stand, \$50. 486-0174.

## Musical Instruments

WERSI DX100 digital electronic MIDI synth/organ, road ready w/shoe, pedalboard, pwr amps, 4 speakers, mixer, stand, etc., \$2,800; WERSI SW for above (Commandore comp.), \$125; Commandore SX-64 portable computer as peripheral to above synth/SW, \$300. Samouce, x35053 or 482-0702.

Corn Coronet, good cond., suitable for intermediate school band, \$275. Kathy, x39140 or 332-6305.

Antique Emerson upright piano, ca. 1890-95, dark mahogany, good cond., needs tuning, \$300. x34169 or 479-3652.

Fender Mustang 6-string elec. guitar w/hard wood case, new strings, and tremolo bar, \$175 OBO; Ventura 12-string acoustic guitar w/case and new strings, \$150 OBO. Rafe, 996-9701 or 283-5638.

Magnatone 6-string elec. guitar w/strap and case, hardly used, \$50. 532-2215.

Kramer Ferrington elect./acoustic guitar w/hard shell case, \$250. 335-2463.

## Personal

Engineer with moderate knowledge of German is interested in informal German conversation over lunch approx. once/week to brush up on speaking skills. Chris, 333-6866 or 532-1198.

## Pets & Livestock

AKC Chihuahua, shots, wormed, \$120. 534-3893.

Adult male umbrella cockatoo w/6 ft. blk iron cage on wheels, together, \$500. Kathy, 283-5302 or 667-6180.

Rabbits, mini-lops and New Zealand. Gailo, 554-6200.

Exotic miniature Vietnamese pot bellied pigs w/ registration papers, white markings, \$500-\$2,000 ea. 713-482-6744 or 409-778-6976.

Exotic Australian Shepherd (Aussie) dogs, \$250 ea.; exotic finches, ring neck doves, and guinea pigs, \$5 ea. 482-6744.

Ball python snake, 4' long, good pet, w/carry case, \$75. 480-4839.

West Highland white terrier puppies, AKC regis., 8 wks old, \$325 ea. 409-722-8099.

Siberian Husky, AKC regis., female, blk/white w/blue eyes, 2 yr old. 554-6223.

Dachshund pups, AKC, standard, smooth, blk/tan, shots and wormed, CH, bloodlines, born 7-6-90, \$200-\$250. Emelie, x37234 or 489-1390.

Dobbie pups, 1 male and 1 female (litter mate is a Blue), born 8-13-90, \$75; cockatiels and love birds, \$20-up. 409-925-6405.

## Photographic

Hanimax Motor Marine I underwater 35mm camera, 35mm lens, close-up lens, motorwind, flash, \$315. Kevin, 283-1989 or 532-2181.

## Household

Miniblinds, 1 set for patio, 3 sets for standard single windows. Sienna Brown, x35505 or 480-6797.

Sears 19" portable color TV, built-in antenna, \$65. lv, x36461.

stewed tomatoes.

## Thursday

**Space flight banquet**—The North Galveston County Chamber of Commerce will host its Annual Space Flight Banquet beginning at 7:15 p.m., Oct. 4, at the South Shore Harbour Resort and Conference Center in League City. For more information call 337-3434 or 534-3231.

**Cafeteria menu**—Special: chicken fried steak. Entrees: beef tacos, barbecue ham steak, Hungarian goulash. Soup: turkey and vegetable. Vegetables: spinach, pinto beans, beets.

## Oct. 5

**Cafeteria menu**—Special: tuna and noodle casserole. Entrees: liver and onions, deviled crabs, roast beef with dressing. Soup: seafood gumbo. Vegetables: whipped potatoes, peas, cauliflower.

## Oct. 9

**Technology van**—The NASA Technology Transfer van will be at JSC from 9 a.m.-1 p.m. Oct. 9 in the parking lot south of Bldg. 25. The van's displays highlight the importance of transferring technology to the private sector.

## Oct. 11

**NPMA dinner meeting**—The National Property Management Association will hold its monthly dinner meeting at 5 p.m., Oct. 11 in the Gilruth Center. For more information contact Sandra Pierce at 282-4151.

## Oct. 20

**Wings Over Houston**—The 1990

Wings Over Houston Airshow will be Oct. 20-21 at Ellington Field. The U.S. Marine Corps' vertical take off and landing jet, the Harrier, will participate and the Confederate Air Force will celebrate the 50th Anniversary of the Battle of Britain with its WWII airpower demonstration. Contact Col. Ray Jones, 850-7545, or Lu Lewis, 784-5200, for more information.

## Miscellaneous

Four video camcorder batteries for Canon 8mm. CM1060 NiCd 6V 1000 mAh, new, were \$75, now \$50 ea.; two fluorescent, 2-bulb shop lights, \$25. Patrick, x32635 or 488-1079.

Self-contained, 21.5 ft travel trlr, \$2,800. Sharon, 538-6337 or 409-848-1282.

Short-bed fiberglass camper, \$300. x36514.

WWII vintage model airplanes, more than 200 planes, 1/72 and 1/48 scales, list avail. A.J., x35541 or 335-1591.

Ping pong table, good cond., \$40. Bob, x30825 or 996-7372.

Emerald cut diamond, 1/2 karat, 56 points, clear, \$1,500. Mary, x31120 or 996-0199.

Two rattan chairs w/cushions, \$45 both; 4 used Bridgestone steel radial tires, P205/70R15, \$40. x38889 or 480-1340.

Jobst extremity pump w/gauntlet, ex. cond., \$100. Earl Rubenstein, x34807 or 532-2242.

Golf clubs, Jr. set, rt. handed, irons 6, 7, 8, PW., putter and 3-wood w/bag, \$50. 332-1725 or 283-5465.

Bow and arrow set, 15 lb pull w/5 Bear arrows, \$20. Aaron Brown, 944-0493.

Lawnmower, 22 in., 3.5 HP B&S engine, \$35; 1HP elec. edger, \$15. 532-1673.

Bandeau belts, \$7-\$15. x31653 or 326-4030.

Man's 14k gold nugget ring w/7 diamonds, 1/2 ct. total wt., sz. 9, was \$1,200, now \$500. Bryan, x38204.

Two tickets to Oilers/49'ers game, 15-yard line. Mike, x38918 or 482-9447.

Light blue polyester sport coat, 40-42 long, good cond., \$25 OBO. Greg, 488-2082 or 797-7348.

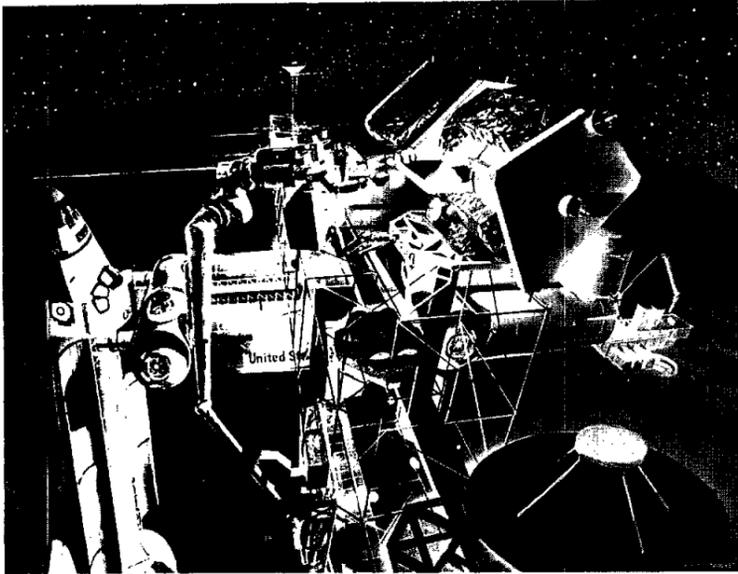
Utility trlr, 6' x 12', sturdy, ex. cond., good tires, \$625. Tony, x35966.

Lady's 14k yellow gold wedding set, marquise cut solitaire diamond, was \$1,200, now \$750 OBO. 484-0959.

10" table saw w/carbide blade and metal stand, \$80. Howard, x37346 or 488-2649.

86 pt. diamond solitaire engagement ring,

NASA Illustrations  
by Harold Smelcer



# Life Aboard Space Station

Artist's 'snapshots'  
show wide variety  
of tasks, equipment  
that will be used on  
orbiting laboratory

Space Station *Freedom* will provide a permanently inhabited international research complex in orbit where human beings can apply their unique capabilities—creativity, dexterity, perception, reason and judgment—to making new discoveries that will enhance future space activities and improve the quality of life on Earth.

These new artist's concepts depict what life may be like in and around *Freedom* when it is erected in orbit later in this decade. Clockwise from above:

▲ Demonstrating how humans and machines will work together, an astronaut working at controls inside the cupola directs the meticulous work of the Flight Telerobotic Servicer to inspect the Astromag facility in the foreground. Astromag is a large superconducting magnet, one of several attached payloads to be mounted on *Freedom's* expansive truss. It will allow particle physicists to study the origin and evolution of matter in the galaxy. The FTS is a smart space robot being developed by Goddard Space Flight Center which can be operated independently or, as shown here, attached to the Mobile Servicing Center being provided by Canada.

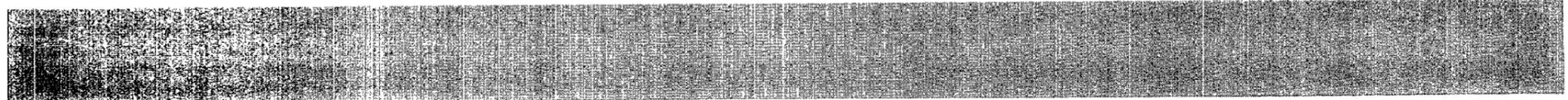
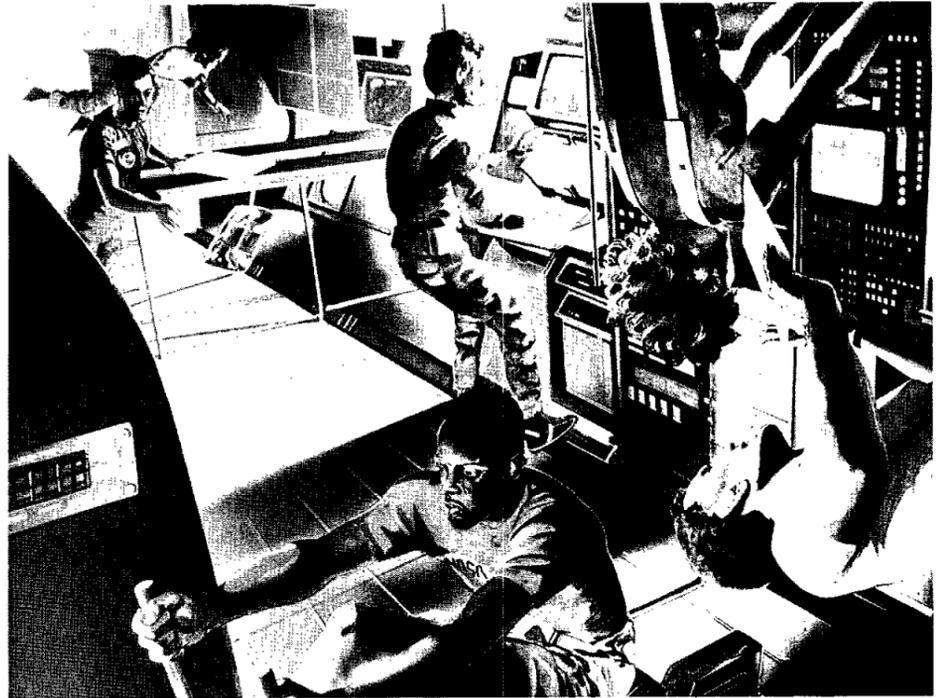
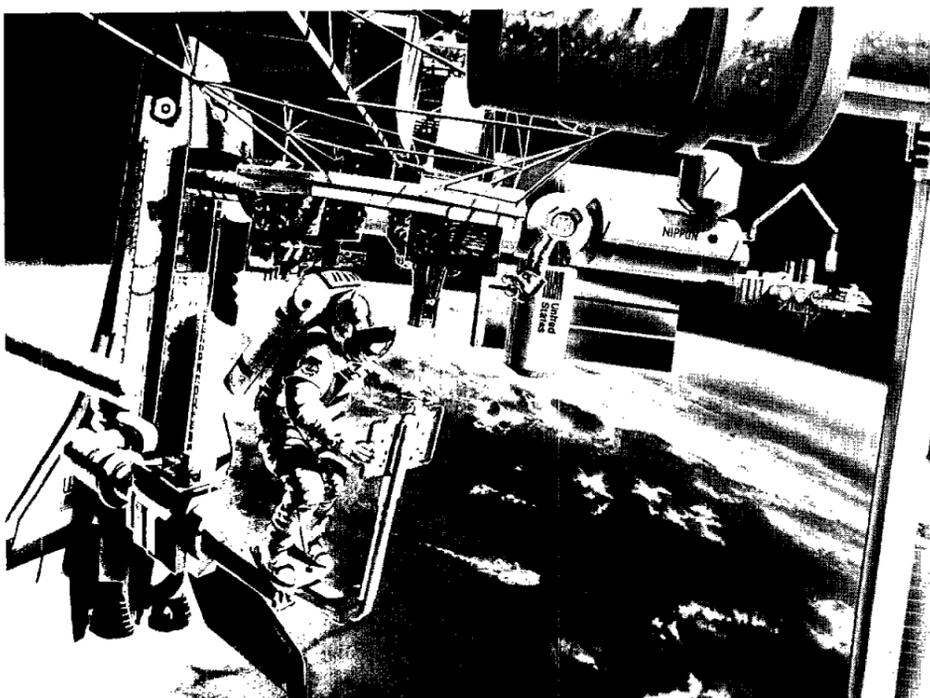
▼ An astronaut performing extravehicular activity makes his way toward *Freedom's* starboard alpha joint, one of two that will allow the power-producing photovoltaic solar arrays to rotate while passing electricity back to the modules. Another astronaut is making her way down the truss with the help of a Crew Equipment Transfer Aid.

► A typical work day aboard *Freedom* sees five of eight crew members at work in the U.S. laboratory module. Japan and the European Space Agency also are contributing laboratories, which will be

fully outfitted for operating interior and attached payloads. An astronaut in the foreground is examining the results of a fluids experiment. The astronaut behind her, using foot restraints, works at the life-sciences workstation. Near the ceiling, another astronaut pulls down a utility box to retrieve equipment. In the background, one astronaut is shown at the laboratory workbench, while another has pulled down an experiment rack for servicing. A typical crew will work six 9-hour days a week and will remain in orbit for 90 to 180 days.

▲ Another snapshot, this time in the U.S. habitation module, shows activities in *Freedom's* living quarters. At bottom left, an astronaut exercises on a rowing machine while watching a video of his favorite Earth scenery. Above him, another jogs on a treadmill. Observing their workouts is a German astronaut who, in this mission, is in charge of the exercise regimens. At a computer workstation in the center of the picture, another crew member monitors the health of the space station. In the background, an astronaut grabs his free-floating dinner. *Freedom's* kitchen will be equipped with a microwave oven for heating, a table for eating and a video monitor for entertainment. The biggest difference is the view from the kitchen windows.

▼ Outside again, an astronaut is moved into position on the end of the MSC arm to inspect one of *Freedom's* large radiator panels. In the background, another astronaut has just left the airlock. Also shown are the U.S. logistics module, a pressurized container used to transport and store equipment and supplies and the Japanese Experiment Module, including its robot arm, exposed facility and experiment logistics module.



# Board announces dual career ladder promotions

JSC's Senior Promotion Board approved 30 nominees for promotions in September based primarily on expanding job responsibilities and scientific and engineering impact.

The dual career ladder promotions to the GS-14 and -15 levels were made separate from those selected through the Competitive Placement

Plan in an effort to ensure that nominees in both paths receive consideration.

Those receiving promotions, which became effective Sunday, are:

Mission Operations Directorate: Frank Janes, Brian D. Perry and Ronald J. Zaguli.

Engineering Directorate: Linda K.

Bromley, Robert S. Davis, William K. Dwyer, Robert M. Egusquiza, Jane T. Malin, Joe D. Gamble, Winston D. Goodrich, Michael B. Lawson, Chin H. Lin and Joseph R. Thibodeau III.

Space Shuttle Program Office: Craig M. Carothers and Tri X. Nguyen.

New Initiatives Office: J. Dale

Denais, Robert L. Giescke and Michael L. Richardson.

Center Operations Directorate: Garland B. Moreland.

Space Station Projects Office: Thomas W. Anderson and Paul L. Boldon.

Information Systems Directorate: Peter Gillette and Robert N. Lea.

Space and Life Sciences Directorate: Suzanne M. Fortney, Marilyn M. Lindstrom, Dane M. Russo and John F. Stanley.

Orbiter and GFE Projects Office: Benjamin F. McGhee II.

Lunar and Mars Exploration Program Office: Jerome A. Bell and Alex S. Dula.

## Kraft earns Gilruth Award

Former JSC Director Christopher C. Kraft has been selected as the 1990 recipient of the Robert R. Gilruth Award presented by the North Galveston County Chamber of Commerce.

The award, named after JSC's first director, will be presented at the third annual Space Flight Banquet on Thursday at the South Shore Harbour Resort and Conference Center.

Kraft served at JSC's director from January 1972 to August 1982, when he retired from federal service. Since that time he has served as a consultant to Rockwell International, IBM and several other companies.

Kraft was selected as one of the original members of the Space Task Group, the organization formed to manage Project Mercury. He served as flight director for all of the Mercury missions and many of the Gemini missions.

Last year's recipient, Richard H. Kohrs, director of NASA's Space Station Freedom Program in Washington D.C., will present the award.

Keynote speaker for the event will be Robert F. Thompson, vice president and general manager of McDonnell Douglas Space Systems Co.-Space Station Division. Master of ceremonies is Channel 13 reporter Stephen Gauvain.

Ticket prices are \$350 for a corporate table of eight persons and \$35 for individuals. Reservations can be made through the chamber at 337-3434 or 534-3231.

## Gun sounds for Intercenter Run

NASA civil servants and contractors from throughout the agency will be running for their home team in the biannual Intercenter Run next month.

All 11 NASA centers and headquarters will be competing against each other in 10K and two-mile runs. Scoring is calculated using the order in which a runner finishes and the percentage of participation at each center.

At JSC, runners times themselves for a two-mile run, 10,000 meter run or both. Each individual then reports to the Gilruth Center, Rm. 146, to enter his or her times. As times improve, the scoring sheet is updated for each runner.

Participants will receive a free Intercenter Run T-shirt. Only badged employees are allowed to participate.

The competition begins Monday and extends through Oct. 31. At the end of the month, the scoring sheets will be submitted. Results will be available a few months after that.

For more information, contact the Gilruth Center at x35789.

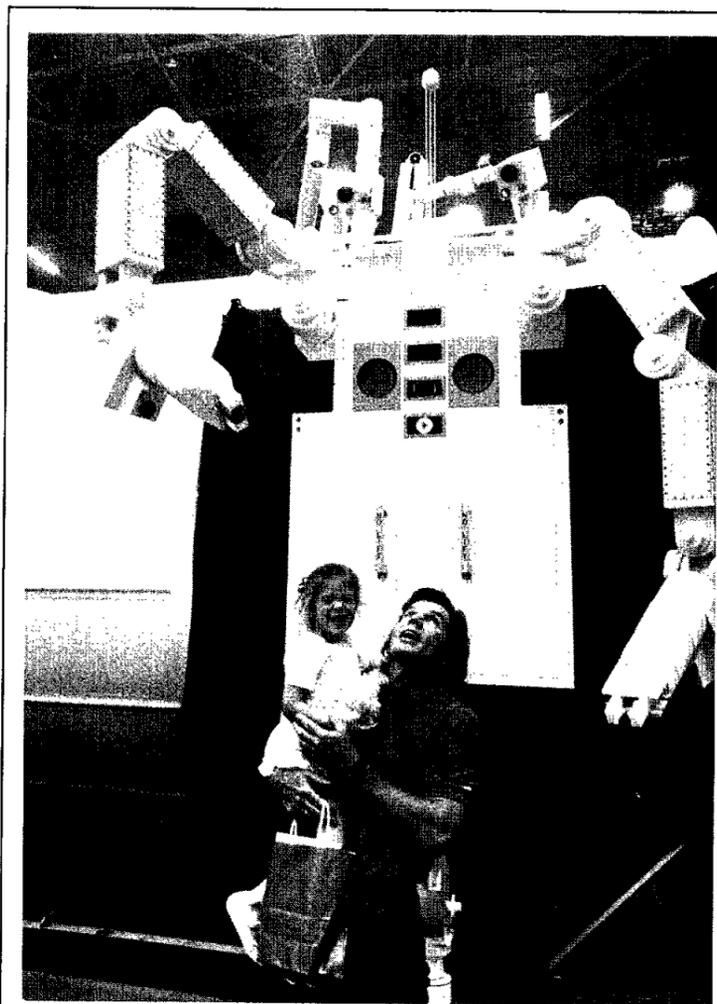
## Challenger Center seeks volunteers

Houston's Challenger Center, a privately funded, non-profit living memorial to the *Challenger* crew, needs volunteers to help run mission simulations for young astronauts on Saturdays and occasional Sundays.

Volunteers choose their own days and times to help out; a technical background can be helpful but isn't necessary. An orientation and mission are planned at 10 a.m. Saturday at the Houston Museum of Natural Science. Anyone interested should call Dennis Dillman at x31733.

## Correction

A story in the Aug. 21 Roundup about winners of the Patent and Tech Brief Awards omitted the name of one winner. Karen S. Edelstein received a Tech Brief Award for her contribution to an ICOSA Cupola for Space Station Freedom.



**HIGH AS AN ELEPHANT'S EYE—A mock-up of the Flight Telerobotic Servicer looms over actor John Davidson and his 3-year-old daughter, Ashleigh, in front of the Space Station Freedom mock-up in Bldg. 9B. Davidson and most of the cast of the musical "Oklahoma," which recently played at the Music Hall in Houston, spent last Wednesday touring JSC and picnicking at the Gilruth Center.**

JSC Photo by Andrew Patnesky

## Health Related Fitness classes start soon

Employees interested in JSC's Health Related Fitness Program (HRFP) should sign up soon to reserve a space in the program's 1990-1991 classes.

Participants in the first session of the initial 12-week course (HRFP I) will meet Oct. 1 at the Gilruth Center. Participants in the first session of the 10-week refresher course (HRFP II) will meet Oct. 2. Four additional sessions of HRFP I and two additional sessions of HRFP II will be offered in 1991.

Applicants must be declared healthy after undergoing a medical examination and a maximal treadmill test if deemed necessary. The JSC Clinic furnishes the examination for civil servants. Contractors, dependents or retirees must obtain an examination at their own expense.

Enrollment in each course is limited to 40 students.

NASA/JSC program studies show that over the long term, participants' health risks lessened while non-participants' health risks increased.

The program is designed to develop skills needed to exercise safely and effectively, promote an understanding of exercise's impact on health, and improve cardiorespiratory endurance, relative body fatness, muscular strength and flexibility.

To apply, complete JSC Form 1285 and mail it to Code AW or deliver it to the HRFP staff at the Gilruth between 8 a.m. and 5:30 p.m. After being medically cleared, applicants will be scheduled for a one-hour consultation during which they will receive a scientifically designed exercise prescription and assigned to one of the education classes. For more information call x30301 or 30302.

## JSC employees receive Silver Snoopy Awards

Fourteen JSC civil service employees recently received Silver Snoopy Awards for their outstanding contributions to NASA's flight safety and mission success.

Recipients were Nancy Tengler, Structures and Mechanics Division; Steve Poulos and James O'Kane, Crew and Thermal Systems Div-

ision; Ed Schlei, Safety Division; Linda McCoy, Engineering Business Management Office; Greg Lange, Cargo Engineering Office; Art Hiemer, Flight Data Systems Division; Tri Nguyen, Systems Engineering Office; Thomas Jeffcoat, Propulsion and Power Division; Chris Mortelaro, Space Shuttle Program Control

Office; Dick Walter, Space Shuttle and Space Station Freedom Payloads Project Office; Greg Smith, Orbiter and GFE Projects Control Office; and Mark Schmalz and John Griffin, Tracking and Communications Division.

The Silver Snoopy Award is a part of the Manned Flight Awareness

Program, and is the astronauts' personal award to employees who have made outstanding contributions.

Several more awards are forthcoming. Each presentation is foreshadowed by the appearance of a Snoopy poster in the recipient's building.

## Furlough for civil servants could extend to 22 days

(Continued from Page 1)  
Monday if a budget agreement is not reached. Further delays in a deficit reduction program could mean as many as 22 furlough days.

JSC Director Aaron Cohen has received plans from each directorate specifying how and when, within the 15-day period, they plan to implement any furlough.

All employees will be required to take any furlough in one-day increments. Employees are prohibited from coming to work on the furlough day.

## Diary of a smoker to chronicle ordeal of quitting

(Continued from Page 1)  
hatched under rocks. He was honest. He said he couldn't guarantee that we would never want a cigarette again. But he did offer to teach us how to deal with it, and he offered hope. "Seventy five percent of the people who smoke had at least one parent who smoked," he said. "Smoking is a learned behavior. You were not born craving nicotine. That's good news, because it means you can unlearn it." He was patient, as well, even willing to ask really loaded questions. "How

many of you have mixed feelings about being here?" he asked. There were many hands, punctuated by one person who said she was still getting past hatred, and hadn't yet begun to cope with merely mixed feelings. Cold, but accurate. And honest.

Our homework assignment was twofold: first, we are to calculate how much we will save each month by not smoking. For me, it will amount to a raise of \$120 a month, roughly speaking, or more than \$1,400 over the coming year. That should help a lot

in about four weeks, when I'll be willing to pay someone \$500 for a cigarette. The other assignment was to quit smoking for 24 hours sometime this week. The idea, presumably, is to get accustomed to nicotine withdrawal.

By the time these words are in print, I will already have done my 24 hours in the smoker's salt mine. Gee, I can't wait to find out what our assignment is next week. I sure hope the folks at Methodist haven't discovered a connection between smoking cessation and tap dancing in a mine field.

## Space News Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every Friday by the Public Affairs Office for all space center employees.

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